4 Communication Across the Curriculum and Institutional Culture

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WAC challenges deeply held institutional attitudes toward writing, learning, and teaching: attitudes that are reinforced by the differentiated structure of knowledge and education.
> — David Russell, *Writing in the Academic Disciplines, 1870–1990: A Curricular History*

Over the years that we've worked to establish writing—and, more broadly, communication—across the curriculum at our university, we have bumped up against every "deeply held institutional attitude" that Russell lays out in his analysis of WAC. Because of a unique combination of circumstances at Colorado State University, our approach to Communication Across the Curriculum (CAC) is succeeding because we embrace two other instrumentalities that also challenge deeply held attitudes about writing, learning, and teaching—computers and community.[1]

Our approach differs in three ways from typical approaches to CAC in American colleges and universities. First, unlike more traditionally conceptualized CAC programs, in which faculty are the primary audience for CAC training and support, we have expanded our CAC outreach efforts to include direct support for students. Second, we have relied heavily on computer technologies to support CAC across our campus. Third, building on an existing community of writers and teachers on our campus, we have located our CAC program in our campus writing center.

Elsewhere, we discuss in greater detail the rationale for adopting our approach to CAC (Palmquist et al. 1995). Briefly, however, our decision was shaped

by a series of studies that we conducted in the first year of funded work on our CAC development project. (For reports of these studies, see Thomas 1994; Vest et al. 1995, 1996; Zimmerman and Palmquist 1993; Zimmerman et al. 1994). Our studies suggested, among other things, that the faculty we hoped to work with in our CAC program were unenthusiastic about using communication activities in their courses in ways typically advocated in CAC programs.

Resistance from faculty is often cited as a primary obstacle to the long-term success of CAC programs (Couch 1989; Holladay 1987; Kaufer and Young 1993; McLeod 1989; Soven 1992; Strenski 1988; Swanson-Owens 1986). We found, as is typically the case at other institutions, that much of the resistance stemmed from the challenge of teaching large classes and time constraints imposed by demanding research agendas. We also learned, however, that our faculty were concerned about the difficulties of providing thorough grounding in both disciplinary content and communication skills without exceeding a state-mandated limit on required course credits. We concluded, as a result, that a traditionally conceptualized CAC program was unlikely to meet the same level of success on our campus that it has met at other institutions (Russell 1991; Walvoord 1992; A. Young and Fulwiler 1986; R. Young 1991).

In the face of faculty reluctance to take on a major role in supporting CAC in their classrooms, we decided to expand our CAC outreach efforts to include direct support for students. This decision was based on our recognition that we could use our campus network to support students in two primary ways: (1) by helping students obtain feedback on communication assignments from their instructors, their classmates, and writing tutors (e.g., tutors in the campus Writing Center and in the Oral Communication Center); and (2) by providing access to instructional programs that addressed communication issues. Essentially, we realized that we could build on the then-emerging notion of an Online Writing Center to provide support for communication instruction across the university. (For discussions of online writing centers, see Child 1994; Ericsson 1994; Harris 1994; Palmquist 1994; see also Rodrigues and Kiefer's 1993 discussion of the Electronic Writing Center.)

Our decision to directly support students has not meant abandoning traditional CAC outreach to faculty. We continue to offer CAC workshops and to consult with faculty. We have also created instructional software that addresses faculty concerns about designing, evaluating, and responding to communication assignments. Rather than shifting our focus away from faculty, we have expanded it to include both faculty and students. In a sense, we have combined an approach to CAC that views faculty, to use Richard Young's (1991) phrasing, as "agents of change" with Tori Haring-Smith's (1987) "bottom-up" approach to CAC, which views students as the primary audience for CAC efforts.

Focusing our CAC efforts on students as well as faculty led us to the final decision that has shaped our CAC program: locating the program within our campus Writing Center. The Writing Center is highly visible on our campus,

offering both formal tutoring for underprepared students and walk-in support for undergraduate students, graduate students, and faculty. The decision to locate our CAC program in our campus Writing Center is one we share with a minority of CAC designers (Harris 1992; Holladay 1987; Russell 1991). Yet it is one that has a number of advantages, among them ease of access to experienced tutors and a general awareness among students and faculty about the benefits of seeking advice from tutors.

Our decision to expand the audience for CAC on our campus by directly supporting students and our related decisions to use computer technologies and the campus Writing Center to create campus-wide support for CAC have attracted support for CAC across the university. As we were completing work on this chapter, our university made a long-term commitment to support our CAC program, agreeing to fund a new tenure-track position to direct the program, to support a graduate assistant for the director, and to fund a writer/programmer for Web site development. Even more important for the long-term success of CAC on our campus, our efforts have helped us form a community of collaborators across disciplines who share our concern about students' writing and speaking abilities. This community includes faculty in communication disciplines—business communication, composition, journalism, speech communication, and technical communication—that share common interests in communication but who, because of departmental boundaries, have often worked in isolation on our campus. It also includes faculty in non-communication disciplines who have begun to work with us on communication instruction in their classrooms.

Below, we discuss the network communication tools and instructional software supporting CAC on our campus, and then we explore the communities created by the need to share expertise about writing, learning, teaching, and disciplinary knowledge. We conclude the chapter by reflecting on the long-term outlook for our CAC program.

Network Communication Tools and Instructional Software for CAC

For the past three years, we've worked to develop software to support students as they write and speak for course activities and to support faculty using writing and speaking activities in their courses. To help students access support materials easily, we have made them available through our Online Writing Center, the focus for CAC activities on our campus. We use the phrase "Online Writing Center" to refer both to the place where faculty and students can turn for support with communication activities and to the collection of software that can be used to support those activities. The Online Writing Center can be reached via electronic mail (by mailing to tutor@vines.colostate.edu) and via the World Wide Web (see Figure 4.1).[2]
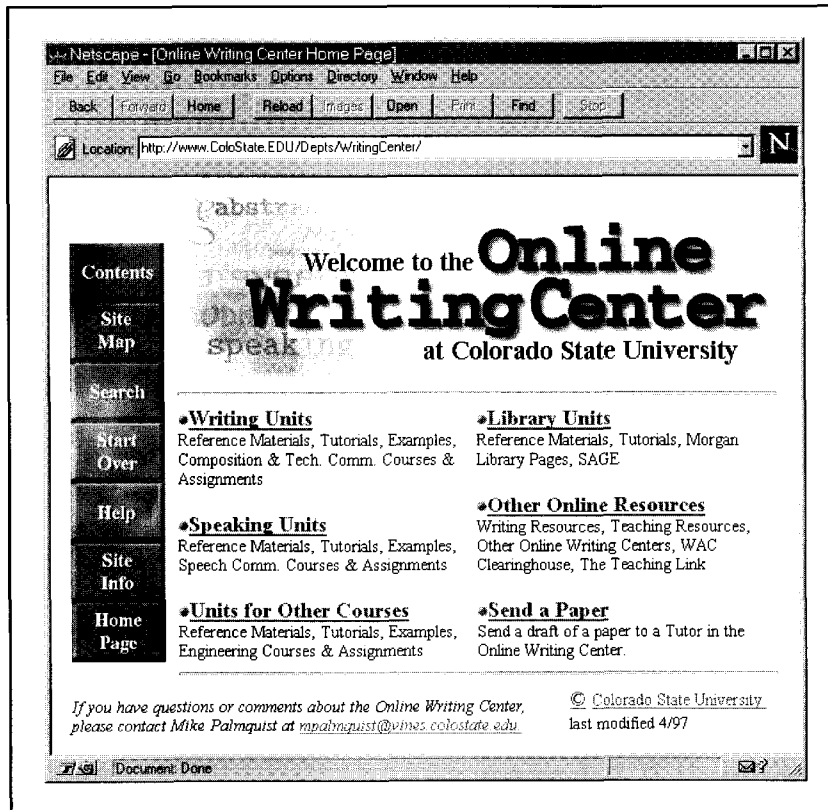
Figure 4.1. The Online Writing Center homepage.

Support for Students

The Online Writing Center supports students through four kinds of instructional units, direct communication with tutors in the Online Writing Center, and the Online Writing Center's "Other Online Resources" pages. We will consider the instructional units and communication options shortly. The "Other Online Resources" pages help students locate resources at other sites on the World Wide Web, ranging from other Online Writing Centers to specific resources such as style and citation guides, dictionaries and glossaries, thesauri, grammar guides, and sites that explore concerns related to English as a second language.

Instructional Materials

Reference Materials provide explanations and commentary about communication genres, processes, or issues, such as writing a summary, writing an argu-
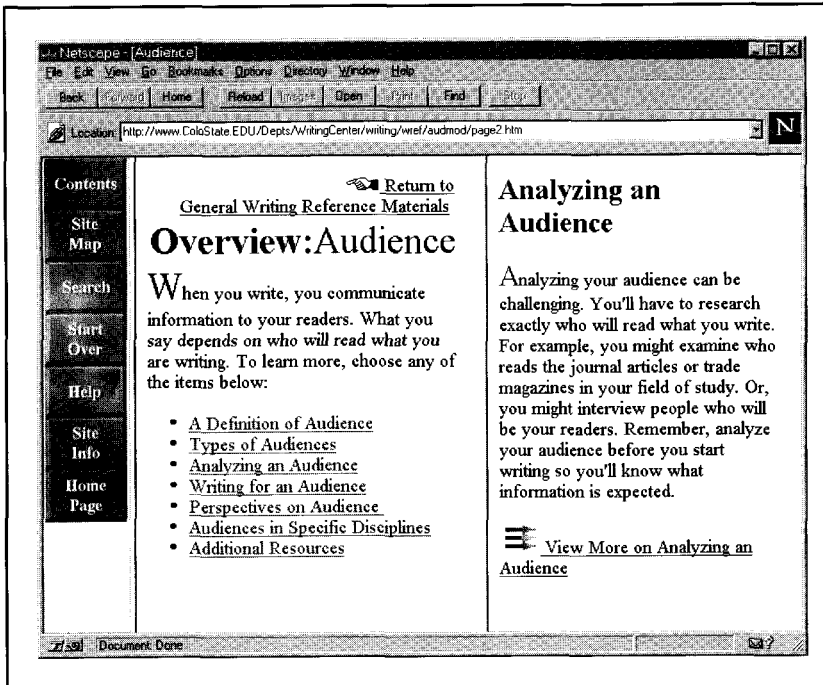
Figure 4.2. A reference materials unit on audience.

ment, or giving an informative speech (see Figure 4.2). Reference Materials look much like online textbooks: hierarchical hypertexts that use an overview (or home) page and a frame-based layout for multiple screens of text and graphics to be presented on the same "page." Sections of a particular Reference Materials unit appear as separate pages linked to the overview page. Each section can have multiple subsections, and so on. Reference Materials are designed to help readers locate information quickly. We provide tables of contents for each Reference Materials unit, as well as for the overall Web site. Students can also use a search program to look for specific kinds of information. Reference Materials also link to related Annotated Example Texts and Speeches and to Interactive Tutorials.

Annotated Example Texts and Speeches present readers with model texts and speeches (the latter provided via video clips) annotated by teachers and experienced writers or speakers (see Figure 4.3). Readers select sections of a text or speech by clicking on a list on the left side of the screen. The text is displayed in the center of the screen. Readers view annotations, displayed in the right-hand frame, by clicking on blue "comment" icons within the text or next to a video clip. While reading comments about specific aspects of the text

File   Edit   View   Go   Bookmarks   Options   Directory   Window   Help

Back | Forward | Home | Reload | Images | Open | Print | Find | Stop

Location: http://www.ColoState.EDU/Depts/WritingCenter/other/oasign/ce208/project/page9.htm

Example Technical Report

♦ Transmittal Letter
♦ Title Page
♦ Abstract
♦ Exec. Summary
♦ Contents
♦ List of Figures
♦ List of Tables
♦ Report Body
♦ References
♦ Appendices

◄Previous

Library construction site, residents do not have a problem with noise and there have been no complaints of disturbances. *Instructor Comment* MASK Engineering believes that this will be the case for the residents in Allison and Parmelee when they return in the fall as the performing arts center is finished.
Instructor Comment

Figure 2.1 *Instructor Comment*
Map of campus - circled area represents site where Green Hall currently stands

Instructor Comments

Tom Siller, Civil Engineering Professor

Figure 2.1: With this figure, I'm not certain whether or not this is the caption or part of the title of the figure. This says, "Map of Campus, circle area represents the site where Green Hall currently stands." That mixes what it is. A revised caption would read something like "Map of CSU Campus Indicating Proposed Site Location."

The map also borders on plagiarism. When you take a figure from someone else's work, you put in the caption
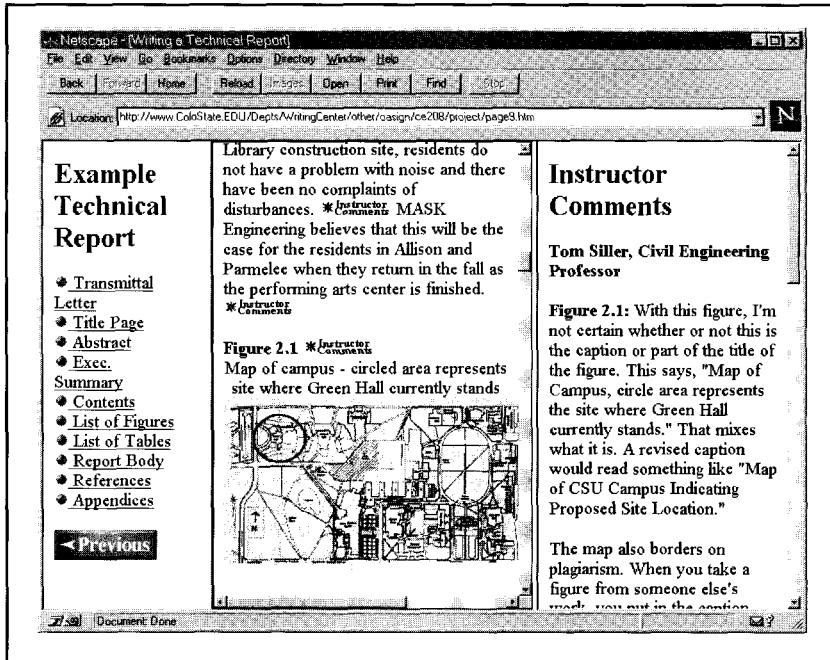
Document Done

Figure 4.3. An annotated civil engineering technical report.

or speech, students can jump from annotations to relevant Reference Materials, Interactive Tutorials, and Web sites.

Interactive Tutorials present interactive exercises to support specific composing processes, such as generating ideas, revising a paper, or developing pro and con arguments on a particular topic (see Figure 4.4). Tutorials are brief—typically no more than twenty screens. Students using the Tutorials write throughout the exercise so that they finish with notes or a draft to refer to later in their composing process: at the end of a Tutorial, student responses are collated in a form that can be edited, saved, printed, or e-mailed. In contrast with Reference Materials, Tutorials are linear. Readers can move back and forth through the Tutorial, but they cannot jump ahead. However, Tutorials are displayed in a separate window that floats above or alongside the browser, thus allowing students to switch between the Tutorial and Assignments, Reference Units, or Annotated Examples.

Online Assignments provide information about communication assignments in a particular class (see Figure 4.5). Assignment units attempt to replicate the process of discussing assignments during class. In a typical class, teachers hand out a formal assignment sheet and then discuss it in detail with their students. Following this initial discussion, students usually ask questions such as, "What
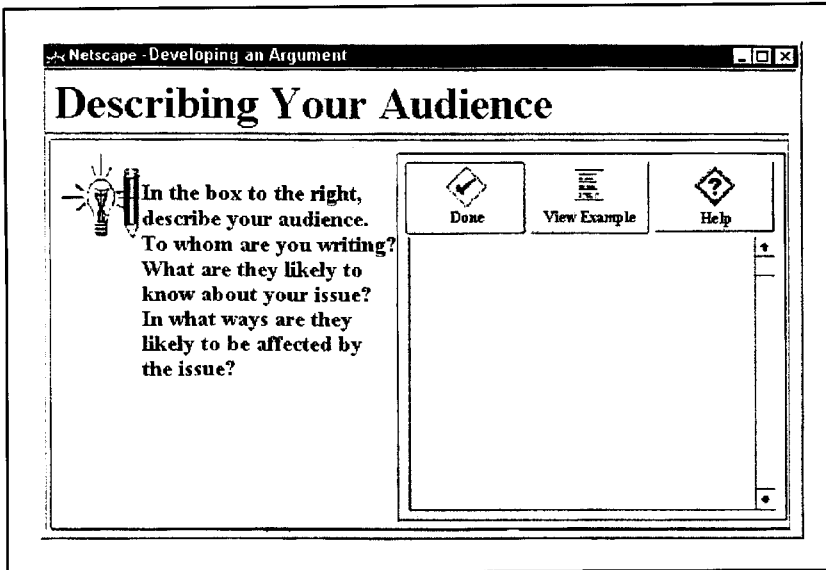
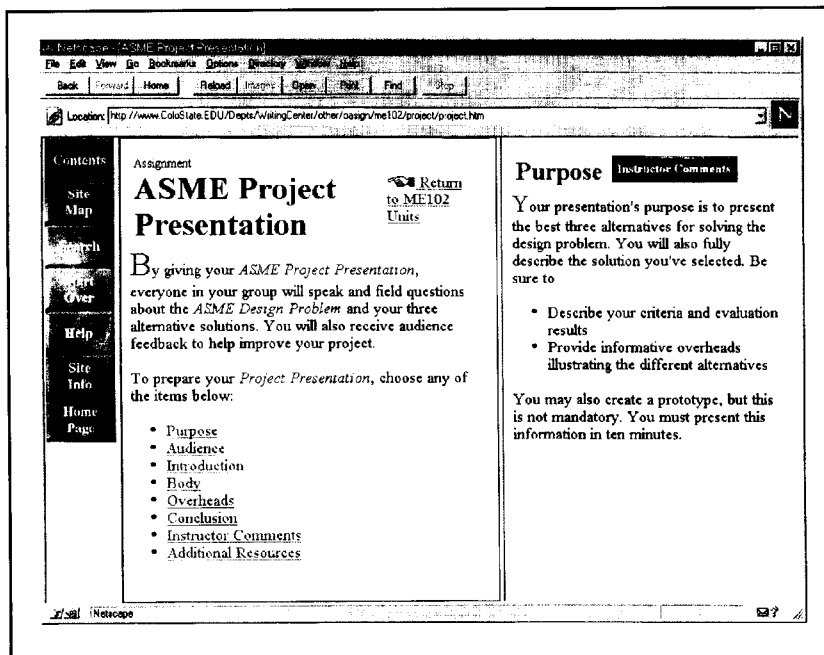**Figure 4.4.** An interactive tutorial on developing an argument.

Figure 4.5. An assignment in mechanical engineering.

do you really mean by . . .?" In the Assignment units, we use comments from instructors to present this information. In addition to detailed discussions of an assignment, Assignments also link to relevant Reference Materials, Tutorials, and Annotated Examples, as well as to related Web pages.

Communication Tools

Students can also use the Online Writing Center to contact tutors or their instructors through electronic mail, chat, or Web forums. Students can use a forms-based e-mail program, which we call "Send a Paper," to simplify sending a draft of a communication assignment to a tutor (see Figure 4.6) or, using a "mailto:" address on our Web Site, they can use the standard e-mail programs built into most browsers. Our assessment studies indicate that students unfamiliar with e-mail find the "Send a Paper" program easier to use than standard e-mail software. In addition, the "Send a Paper" program allows students to elicit specific feedback about their drafts because it prompts them to write briefly about their understanding of the assignment, their goals as writers, their audience, and so forth. These questions can be customized for specific courses and the program can be accessed from within particular Online Assignments.

Figure 4.6. The "Send a Paper" program.

Support for Teachers

Despite focusing primarily on students, the Online Writing Center also provides support for faculty. We are currently developing software to support faculty who have not before assigned writing in their courses, but in the meantime faculty can click on Additional Online Resources. This page accesses a Reference Materials unit on designing communication assignments, responding to communication assignments, and using writing to support student learning. The Additional Online Resources page also links to teaching resources and Web sites on writing and speaking instruction. Finally, faculty can also access the Writing Across the Curriculum Clearinghouse (http://www.colostate.edu/depts/WAC). The Clearinghouse provides information on teaching practices, program design, and research studies. It also provides a comprehensive list of WAC and CAC programs, a list of individuals who can provide various kinds of support for starting and maintaining WAC and CAC programs, and a Web forum on WAC and CAC issues.[3]

Instructional Uses of the Online Writing Center

The Online Writing Center challenges the attitudes and sites that "differentiate structures and knowledge" on our campus. Teachers initiate student use of the Online Writing Center with both in-class and out-of-class assignments. For example, in computer-supported writing classes, Online Writing Center materials accessed during class support lessons designed by individual teachers. A teacher can begin a class by asking students to generate ideas using one of the prewriting Tutorials, or a teacher could ask students to review a Reference Materials unit on library research after introducing an assignment that draws on outside sources.

Students also initiate use of the Online Writing Center to meet a variety of learning goals. Students in a writing class can use the "Send a Paper" program to exchange papers with their classmates or to ask for feedback on their drafts from their teacher or a Writing Center tutor. Students can also access the class page on the Online Writing Center and use a Web Forum, which supports threaded discussions just like a newsgroup.

In the campus Writing Center, a tutor might ask a student to use Online Writing Center materials to generate ideas, revise a paper, or review the conventions of a particular genre. A student might work through materials prior to a tutoring session—perhaps via electronic mail after the student has sent a paper to a tutor—or during or immediately after a tutoring session, using a computer in the campus Writing Center.

Online Writing Center materials also supplement communication and disciplinary classes taught in traditional classrooms. Students in a writing or speech class, for instance, might use materials on the Online Writing Center as homework. Similarly, students in a disciplinary class might review an Online Assign-

ment or a Reference Materials unit before making formal presentations or turning in a lab report. If an Online Assignment is used, it is likely that the instructor for the course consulted with CAC faculty prior to making the assignment; the faculty member may also have helped develop the content of the Reference Materials unit. When used in disciplinary courses, the Online Writing Center supplements rather than replaces information provided by the instructor on the specific communication assignment.

Even in courses in which the instructor is not specifically working with CAC faculty or advising students to use resources available through the Online Writing Center, students can use those resources as they work on communication assignments. Similarly, students in such courses can seek feedback on their drafts via electronic mail or by visiting the campus Writing Center in person. Students learn of these services through other courses they've taken or simply by noticing the Online Writing Center while browsing the university's Web site.

As work continues on the development of the Online Writing Center, we are assessing the use of the instructional software and the network-communication tools in classrooms, in the campus Writing Center, and in our usability testing lab. We are now expanding the use of the Online Writing Center to students enrolled in all sections of our required, all-university composition course; in speech communication courses; in technical communication courses; and in a range of disciplinary courses.

The Impact of the Program on Students and Faculty

We turn now to the second of the features that strengthen our CAC efforts—the communities created by the need to share expertise about writing, learning, teaching, and disciplinary knowledge. We anticipated that using computer network tools would allow us to reach a greater number of students than we would have through a traditional WAC approach, and students have indeed begun to use the Online Writing Center inside and outside of the classroom. Access to the Online Writing Center—and through it to Writing Center tutors, communication faculty, disciplinary faculty, and classmates—has allowed students and faculty to use communication programs and instructional software both on and off campus. Even more important, awareness among students and faculty of the existence of the Online Writing Center continues to grow, resulting in greater use of its resources and greater support for communication assignments. But it takes time to build a community, and our work in the past few years is only now beginning to show the importance of involving as many members of the university community as possible in the development and implementation of such an multifaceted project.

Initial reactions to the Online Writing Center were decidedly mixed. A number of faculty expressed concerns that the materials might replace instruction—and, indeed, instructors. The design of the Online Writing Center, however, combined with efforts to inform colleagues about the educational philosophy underlying the programs have helped us eliminate these concerns. That philosophy—to supplement rather than to replace communication instruction and to expand the repertoire for interaction among faculty and students rather than to replace face-to-face interaction with computer-mediated communication—has strongly informed the design of our instructional software and our use of network-based communication.

That philosophy has also shaped the roles we have asked tutors in the campus Writing Center to adopt when they interact with students over the network. During our assessment of their reactions to the programs in the first semester in which the Online Writing Center was implemented, we found that our tutors resisted using the "Send a Paper" program in particular and network-based communication in general. Their responses to our questions indicated that their resistance emerged from their training as tutors and from their concern that network-based interactions would replace, rather than supplement, face-to-face interaction. The tutors told us that their training and experience in the Writing Center clearly showed the value of extended discussions with students about the context for a writing assignment. Electronic mail—and even real-time chat—did not support these extended discussions. More important, because the students who sent drafts over the network seldom came into the Writing Center, tutors felt that the "Send a Paper" program reduced interactions with students.

In turn, we asked tutors if walk-in visits to the Writing Center had dropped off. When they said no, we discussed the benefits of sending papers across the network. First, we explained that many of the students who were sending papers found it a convenient way to get feedback on their writing. Students who might not have—or want to make—the time to visit the Writing Center might send a paper to a tutor for feedback. As a result, the "Send a Paper" program was increasing the number of students with whom tutors could work. Second, we explored ways that the "Send a Paper" program brings more students into the Writing Center. By responding to students with substantive feedback and then asking them to set up an appointment to visit a tutor, tutors invite face-to-face work with students. Finally, we told them that—even in cases where students were reluctant or unable to meet with a tutor—tutors could suggest activities or identify instructional software that might help particular students improve as writers. For instance, a student having difficulty with a fairly straightforward convention such as attributing quotations might benefit from using the "Working with Quotations" Reference unit. Or a student having difficulty considering opposing arguments might find the "Arguments Against Your Position" Tutorial useful.

Fortunately, students and instructors in our writing classrooms reacted positively from the start to the Online Writing Center. Several instructors encouraged their students to use the "Send a Paper" program to get additional feedback on assignments, several used the tutorials and hypermedia programs during class, and still others encouraged students to use the programs outside of class. Our classroom observations, interviews with students, and usability testing sessions showed that students found the programs easy to use. However, students also indicated (as is the case with the early drafts of many textbooks) that the programs would benefit from additional revision. As we complete work on this chapter, we have hired a full-time writer to work on new hypermedia documents and tutorials. We have also budgeted time for additional editing of our existing software.

Reaction from disciplinary faculty was also mixed. Our first attempts to develop software for an electrical engineering course failed when the instructor, who was teaching the course for the first time, was unwilling to spend the time needed to explore how communication activities might fit into her course. Despite the active support of the chair of her department, she strongly resisted working with us—largely, she said, because it was her first time teaching the course and she was uncertain about how it would play out over the semester. In response, we shifted our focus to a course taught by a more experienced teacher who wanted to work with us. This collaboration was much more positive and produced a comprehensive Reference Materials unit that aids students as they work on an eight- to ten-page scientific report.

Our initial partnership with the electrical engineering faculty on our campus has led to partnerships with faculty in our other engineering disciplines and, more recently, has expanded to include faculty in the humanities, social sciences, and sciences. In each case, these partnerships have grown from a recognition that the Online Writing Center could support curricular innovation in a specific course or departmental curriculum. A faculty member in civil engineering contacted us after reading of our work in *Engineering Education*. He is revising the undergraduate curriculum in civil engineering to emphasize more group work, critical thinking, and communication. We are now collaborating on several instructional packages to support the new curriculum. Similarly, a faculty member in mechanical engineering revising the second-year undergraduate sequence has enlisted our help in developing tailored instructional materials that support oral presentations and final project reports.

Most recently, we have begun working with faculty in our own college to develop computer-based support for speaking and writing activities in humanities courses. As with our other partnerships, the impetus for collaboration came when faculty found that our approach to CAC would benefit their efforts to revise their curricula.

Perhaps the most gratifying outcome of our efforts to create a network-supported CAC program has been the strong sense of community that has emerged among the communication faculty and graduate students who have worked on the project. The number of master's theses and projects focused on CAC has exploded in just the last two years, and graduate students are more and more often inviting members of different departments to contribute multidisciplinary perspectives on their communication projects. Before faculty began working together to develop our CAC program, faculty in composition, business communication, journalism, speech, and technical communication had relatively little interaction. Now, we're clearly benefiting from the different perspectives and experiences that we bring to CAC projects. Those differences have not always resulted in harmonious interactions, but we've found that focusing on a shared goal has allowed us to work around our disagreements. In many ways, the communication faculty involved in the Online Writing Center have formed an ad hoc department: we sometimes find that we have more in common with colleagues from another of these departments than we do with other faculty in our own.

Institutional Changes and the Long-Term Success of CAC

Our CAC program has emerged from a collaborative effort among faculty from several departments. Thus far, it has been tied most closely to a research project funded through the Center for Research on Writing and Communication Technologies, an interdisciplinary research center housed in the College of Liberal Arts. While we continue to seek funding to continue the project, we recognize that a crucial element in securing the long-term success of our CAC program is to shift its ownership and development from the Research Center to the Writing Center. As a result, for the past year we have worked to secure long-term institutional funding for the program.

In addition to designing our CAC program, then, we gave ourselves the task of creating the institutional support structure within which it can continue its mission. The structure we believe is likely to be most effective on our campus is one in which the program remains in the Writing Center and is administered through the university composition program (which, in turn, is housed in our English department). We recognize that strong arguments exist on both sides of the question of whether to tie a CAC program to a particular department. However, we are persuaded that the institutional context in which we work favors this arrangement. During the week prior to completing this article, working within the English Department's and the College of Liberal Arts' long-term funding plans, we obtained approval to hire a full-time, tenure-track director of the campus Writing Center (currently a nine-month, non-tenure track appoint-

ment), a full-time writer/programmer, and a graduate teaching assistant who will assist with the administration of the campus Writing Center.

Success in securing institutional grounding for our CAC program emerged from our success at expanding the community of scholars that resulted from our previous development efforts. Success in ensuring the long-term success of the program as an educational enterprise can only come, we believe, if we can continue to attract more faculty to that community. We are confident, given the success we have enjoyed so far, that our program is likely to be successful over the long term. But we recognize that we must continue our efforts to build communities of shared concerns about writing, speaking, thinking, and learning, communities that bind students and teachers into shared allegiances rather than differentiated structures.

Notes

1. The research reported in this article was supported with funding from Colorado State University and the Colorado Commission on Higher Education. The authors gratefully acknowledge the contributions made by the other members of the project team: Thad Anderson, Luann Barnes, Marla Cowell, Greg Boiarsky, Cathy Crim, Karen Criswell, Douglas Flahive, Jake Hartvigsen, Steve Hill, Dawn Kowalski, Donna LeCourt, Jon Leydens, Marilee Long, Michel Muraski, Kathy Northcut, Amy Polisso, Ron Tajchman, Greg Thayer, Laura Thomas, Martha Tipton, and David Vest. We also thank Dawn Rodrigues for her role in early discussions about the design of our CAC program.

2. Initial development of the Online Writing Center was conducted using Asymetrix Multimedia Toolbook, which runs under Windows. We chose to use Toolbook because, at the time we began developing the Online Writing Center, it offered significant advantages over similar development programs. It also provided us with a relatively straightforward way to develop interactive software. At that time, the capabilities offered by the World Wide Web were extremely limited. In September 1996, however, we shifted development from Toolbook to the Web. We made this decision for three reasons: (1) Toolbook is a Windows-based program, which restricted our ability to run our software on other platforms; (2) to run our software, we needed to install a "run-time" version of Toolbook on individual computers, a labor-intensive task that was often plagued by hardware and software incompatibilities; and (3) the capability of the World Wide Web to support graphics, audio, video, and other forms of interaction with users had increased significantly since we began our development project. Although the shift to the Web required extensive work translating our software into HTML files, we were able to transfer much that we had learned about interface and document design from our work using Toolbook.

3. As we were completing work on this chapter, the WAC Clearinghouse was being designed by a group of faculty from several institutions.

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